

PART 145—REPAIR STATIONS**Subpart D—Limited Ratings for Manufacturers**

SPECIAL FEDERAL AVIATION REGULATIONS

SFAR No. 36 [NOTE]

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APPENDIX A TO PART 145

AUTHORITY: 49 U.S.C. 106(g), 40113, 44701–44702, 44707, 44717.

SOURCE: Docket No. 1157, 27 FR 6662, July 13, 1962, unless otherwise noted.

EDITORIAL NOTE: For miscellaneous technical amendments in this part 145, see Amdt. 145–3, 31 FR 3336, Mar. 3, 1966 and Amdt. 145–6, 31 FR 9211, July 6, 1966.

SPECIAL FEDERAL AVIATION REGULATION

SFAR No. 36

EDITORIAL NOTE: For the text of SFAR No. 36, see part 121 of this chapter.

Subpart A—General**§ 145.1 Applicability.**

(a) This part prescribes the requirements for issuing repair station certificates and associated ratings to facilities for the maintenance and alteration of airframes, powerplants, propellers, or appliances, and prescribes the general operating rules for the holders of those certificates and ratings.

(b) A certificated repair station located in the United States is called a “domestic repair station”. A repair station located outside of the United States is called a “foreign repair station”.

(c) A manufacturer of aircraft, aircraft engines, propellers, appliances, or parts thereof, may be issued a Repair Station Certificate with a limited rating under subpart D of this part. Sections 145.11 through 145.79 do not apply to applicants for, or holders of, certificates issued under subpart D of this part. Any facility where the holder of a certificate issued under subpart D of this part exercises his privileges under that certificate may be referred to as a “manufacturer’s maintenance facility.”

[Doc. No. 1157, 27 FR 6662, July 13, 1962, as amended by Amdt. 145–4, 31 FR 5249, Apr. 1, 1966]

§ 145.2 Performance of maintenance, preventive maintenance, alterations and required inspections for an air carrier or commercial operator under the continuous airworthiness requirements of parts 121 and 127, and for airplanes under the inspection program required by part 125.

(a) Each repair station that performs any maintenance, preventive maintenance, alterations, or required inspections for an air carrier or commercial operator having a continuous airworthiness program under part 121 or part 127 of this chapter shall comply with subpart L of part 121 (except §§ 121.363, 121.369, 121.373, and 121.379) or subpart I of part 127 (except §§ 127.131, 127.134, 127.136, and 127.140) of this chapter, as applicable. In addition, such repair station shall perform that work in accordance with the air carrier's or commercial operator's manual.

(b) Each repair station that performs inspections on airplanes governed by part 125 of this chapter shall do that work in accordance with the inspection program approved for the operator of the airplane.

[Amdt. 145-7, 31 FR 10614, Aug. 9, 1966, as amended by Amdt. 145-17, 45 FR 67235, Oct. 9, 1980]

§ 145.3 Certificate required.

No person may operate as a certified repair station without, or in violation of, a repair station certificate. In addition, an applicant for a certificate may not advertise as a certified repair station until the certificate has been issued to him.

§ 145.11 Application and issue.

(a) An application for a repair station certificate and rating, or for an additional rating, is made on a form and in a manner prescribed by the Administrator, and submitted with duplicate copies of—

- (1) [Reserved]
- (2) Its inspection procedures manual;
- (3) A list of the maintenance functions to be performed for it, under contract, buy another agency under § 145.49 or appendix A; and
- (4) In the case of an applicant for a propeller rating (class 2) or any accessory rating (class 1, 2, or 3), a list, by type or make, as applicable, of the pro-

PELLER or accessory for which he seeks approval.

(b) An applicant who meets the requirements of this part is entitled to a repair station certificate with appropriate ratings prescribing such operations specifications and limitations as are necessary in the interests of safety.

[Doc. No. 1157, 27 FR 6662, July 13, 1962, as amended by Amdt. 145-5, 31 FR 8585, June 21, 1966]

§ 145.13 Certification of foreign repair stations: Special requirements.

Before applying under § 145.11, an applicant for a foreign repair station certificate must notify the FAA office having jurisdiction over the area in which the applicant is located of his intention to so apply and send that office a statement of his reasons for wanting a repair station at his place of business. In addition to the information required by § 145.11, the applicant must furnish two copies of a suitably bound brochure, including a physical description of his facilities (with photographs), a description of his inspection system, and organizational chart, the names and titles of managing and supervisory personnel, and a list of services obtained under contract, if any, with the names of the contractors and the types of services they perform. In addition, the applicant must furnish evidence that the fee prescribed by appendix A of part 187 of this chapter has been paid.

[Doc. No. 1157, 27 FR 6662, July 13, 1962, as amended by Amdt. 145-20, 47 FR 35694, Aug. 16, 1982]

§ 145.15 Change or renewal of certificates.

(a) Each of the following requires the certificate holder to apply for a change in a repair station certificate, on a form and in the manner prescribed by the Administrator:

- (1) A change in the location or housing and facilities of the station.
- (2) A request to revise or amend a rating.

(b) If the holder of a repair station certificate sells or transfers its assets, the new owner must apply for an amended certificate, in the manner prescribed in § 145.11 and, if applicable, § 145.13.

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(c) A person requesting renewal of a foreign repair station certificate shall, within 30 days before his current certificate expires, send the request to the FAA office having jurisdiction over the station. If he does not make the request within that period, he must follow the procedure prescribed in §145.13 for applying for a new certificate, but without copies of the brochure.

[Doc. No. 1157, 27 FR 6662, July 13, 1962, as amended by Amdt. 145-8, 32 FR 15670, Nov. 14, 1967]

§ 145.17 Duration of certificates.

(a) A domestic repair station certificate or rating is effective until it is surrendered, suspended, or revoked.

(b) A foreign repair station certificate or rating expires at the end of 12 months after the date on which it was issued, unless it is sooner surrendered, suspended, or revoked. However, if the station continues to comply with §145.71 and applies for renewal before expiration of such certificate or rating, its certificate or rating may be renewed for 24 months.

(c) The holder of a certificate that expires or is surrendered, suspended, or revoked, shall return it to the Administrator.

[Doc. No. 1157, 27 FR 6662, July 13, 1962, as amended by Amdt. 145-16, 43 FR 22643, May 25, 1978]

§ 145.19 Display of certificate.

Each holder of a repair station certificate shall display the certificate and ratings at a place in the repair station that is normally accessible to the public and is not obscured. The certificate must be available for inspection by the Administrator.

§ 145.21 Change of location or facilities.

(a) The holder of a repair station certificate may not make any change in its location or in its housing and facilities that are required by §145.35, unless the change is approved in writing in advance.

(b) The Administrator may prescribe the conditions under which a repair station may operate while it is changing its location or housing facilities.

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§ 145.23 Inspection.

Each certificated repair station shall allow the Administrator to inspect it, at any time, to determine its compliance with this part. The inspections cover the adequacy of the repair stations inspection system, records, and its general ability to comply with this part. After such an inspection is made, the repair station is notified, in writing, of any defects found during the inspection.

[Amdt. 145-5, 31 FR 8585, June 21, 1966]

§ 145.25 Advertising.

(a) Whenever the advertising of a certificated repair station indicates that it is certificated, it must clearly state its certificate number.

(b) Paragraph (a) of this section applies to advertising in—

- (1) Business letterheads;
- (2) Billheads and statements;
- (3) Customer estimates and inspection forms;
- (4) Hangar or shop signs;
- (5) Magazines, periodicals, or trade journals; or
- (6) Any form of promotional media.

Subpart B—Domestic Repair Stations

§ 145.31 Ratings.

The following ratings are issued under this subpart:

(a) *Airframe ratings.* (1) Class 1: Composite construction of small aircraft.

(2) Class 2: Composite construction of large aircraft.

(3) Class 3: All-metal construction of small aircraft.

(4) Class 4: All-metal construction of large aircraft.

(b) *Powerplant ratings.* (1) Class 1: Reciprocating engines of 400 horsepower or less.

(2) Class 2: Reciprocating engines of more than 400 horsepower.

(3) Class 3: Turbine engines.

(c) *Propeller ratings.* (1) Class 1: All fixed pitch and ground adjustable propellers of wood, metal, or composite construction.

(2) Class 2: All other propellers, by make.

(d) *Radio ratings.* (1) Class 1: Communication equipment: Any radio transmitting equipment or receiving equipment, or both, used in aircraft to send or receive communications in flight, regardless of carrier frequency or type of modulation used; including auxiliary and related aircraft interphone systems, amplifier systems, electrical or electronic inter-crew signaling devices, and similar equipment; but not including equipment used for navigation of the aircraft or as an aid to navigation, equipment for measuring altitude or terrain clearance, other measuring equipment operated on radio or radar principles, or mechanical, electrical, gyroscopic, or electronic instruments that are a part of communications radio equipment.

(2) Class 2: Navigational equipment: Any radio system used in aircraft for en route or approach navigation, except equipment operated on radar or pulsed radio frequency principles, but not including equipment for measuring altitude or terrain clearance or other distance equipment operated on radar or pulsed radio frequency principles.

(3) Class 3: Radar equipment: Any aircraft electronic system operated on radar or pulsed radio frequency principles.

(e) *Instrument ratings.* (1) Class 1: Mechanical: Any diaphragm, bourdon tube, aneroid, optical, or mechanically driven centrifugal instrument that is used on aircraft or to operate aircraft, including tachometers, airspeed indicators, pressure gauges, drift sights, magnetic compasses, altimeters, or similar mechanical instruments.

(2) Class 2: Electrical: Any self-synchronous and electrical indicating instruments and systems, including remote indicating instruments, cylinder head temperature gauges, or similar electrical instruments.

(3) Class 3: Gyroscopic: Any instrument or system using gyroscopic principles and motivated by air pressure or electrical energy, including automatic pilot control units, turn and bank indicators, directional gyros, and their parts, and flux gate and gyrosyn compasses.

(4) Class 4: Electronic: Any instruments whose operation depends on electron tubes, transistors, or similar

devices including capacitance type quantity gauges, system amplifiers, and engine analyzers.

(f) *Accessory ratings.* (1) Class 1: Mechanical accessories that depend on friction, hydraulics, mechanical linkage, or pneumatic pressure for operation, including aircraft wheel brakes, mechanically driven pumps, carburetors, aircraft wheel assemblies, shock absorber struts and hydraulic servo units.

(2) Class 2: Electrical accessories that depend on electrical energy for their operation, and generators, including starters, voltage regulators, electric motors, electrically driven fuel pumps magnetos, or similar electrical accessories.

(3) Class 3: electronic accessories that depend on the use of an electron tube transistor, or similar device, including supercharger, temperature, air conditioning controls, or similar electronic controls.

§ 145.33 Limited ratings.

(a) Whenever the Administrator finds it appropriate, he may issue a limited rating to a domestic repair station that maintains or alters only a particular type of airframe, powerplant, propeller, radio, instrument, or accessory, or parts thereof, or performs only specialized maintenance requiring equipment and skills not ordinarily found in regular repair stations. Such a rating may be limited to a specific model aircraft, engine, or constituent part, or to any number of parts made by a particular manufacturer.

(b) Limited ratings are issued for—

(1) Airframes of a particular make and model;

(2) Engines of a particular make and model;

(3) Propellers of a particular make and model;

(4) Instruments of a particular make and model;

(5) Radio equipment of a particular make and model;

(6) Accessories of a particular make and model;

(7) Landing gear components;

(8) Floats, by make;

(9) Nondestructive inspection, testing, and processing;

(10) Emergency equipment;

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(11) Rotor blades, by make and model;

(12) Aircraft fabric work; and

(13) Any other purpose for which the Administrator finds the applicant's request is appropriate.

(c) For a limited rating for specialized services, the operations specifications of the station shall contain the specification used in performing that specialized service. The specification may either be a civil or military one that is currently used by industry and approved by the Administrator or one developed by the applicant and approved by the Administrator.

§ 145.35 Housing and facility requirements.

(a) An applicant for a domestic repair station certificate and rating, or for an additional rating, must comply with paragraphs (b) to (h) of this section and provide suitable—

(1) Housing for its necessary equipment and material;

(2) Space for the work for which it seeks a rating;

(3) Facilities for properly storing, segregating, and protecting materials, parts, and supplies; and

(4) Facilities for properly protecting parts and subassemblies during disassembly, cleaning, inspection, repair, alteration, and assembly;

so that work being done is protected from weather elements, dust, and heat; workers are protected so that the work will not be impaired by their physical efficiency; and maintenance operations have efficient and proper facilities.

(b) The applicant must provide suitable shop space where machine tools and equipment are kept and where the largest amount of bench work is done. The shop space need not be partitioned but machines and equipment must be segregated whenever—

(1) Machine or woodwork is done so near an assembly area that chips or material might inadvertently fall into assembled or partially assembled work;

(2) Unpartitioned parts cleaning units are near other operations;

(3) Fabric work is done in an area where there are oils and greases;

(4) Painting or spraying is done in an area so arranged that paint or paint

dust can fall on assembled or partially assembled work;

(5) Paint spraying, cleaning, or machining operations are done so near testing operations that the precision of test equipment might be affected; and

(6) In any other case the Administrator determines it is necessary.

(c) The applicant must provide suitable assembly space in an enclosed structure where the largest amount of assembly work is done. The assembly space must be large enough for the largest item to be worked on under the rating he seeks and must meet the requirements of paragraph (a) of this section.

(d) The applicant must provide suitable storage facilities used exclusively for storing standard parts, spare parts, and raw materials, and separated from shop and working space. He must organize the storage facilities so that only acceptable parts and supplies will be issued for any job, and must follow standard good practices for properly protecting stored materials.

(e) The applicant must store and protect parts being assembled or disassembled, or awaiting assembly or disassembly, to eliminate the possibility of damage to them.

(f) The applicant must provide suitable ventilation for his shop, assembly, and storage areas so that the physical efficiency of his workers is not impaired.

(g) The applicant must provide adequate lighting for all work being done so that the quality of the work is not impaired.

(h) The applicant must control the temperature of the shop and assembly area so that the quality of the work is not impaired. Whenever special maintenance operations are being performed, such as fabric work or painting, the temperature and humidity control must be adequate to insure the airworthiness of the article being maintained.

§ 145.37 Special housing and facility requirements.

(a) In addition to the housing and facility requirements in § 145.35, an applicant for a domestic repair station certificate and rating, or for an additional

rating, for airframes, powerplants, propellers, instruments, accessories, or radios must meet the requirements of paragraphs (b) to (f) of this section.

(b) An applicant for an airframe rating must provide suitable permanent housing for at least one of the heaviest aircraft within the weight class of the rating he seeks. If the location of the station is such that climatic conditions allow work to be done outside, permanent work docks may be used if they meet the requirements of §145.35(a).

(c) An applicant for either a powerplant or accessory rating must provide suitable trays, racks, or stands for segregating complete engine or accessory assemblies from each other during assembly and disassembly. He must provide covers to protect parts awaiting assembly or during assembly to prevent dust or other foreign objects from entering into or falling on those parts.

(d) An applicant for a propeller rating must provide suitable stands, racks, or other fixtures for the proper storage of propellers after being worked on.

(e) An applicant for a radio rating must provide suitable storage facilities to assure the protection of parts and units that might deteriorate from dampness or moisture.

(f) An applicant for an instrument rating must provide a reasonably dust free shop if the shop allocated to final assembly is not air conditioned. Shop and assembly areas must be kept clean at all times to reduce the possibility of dust or other foreign objects getting into instrument assemblies.

§ 145.39 Personnel requirements.

(a) An applicant for a domestic repair station certificate and rating, or for an additional rating, must provide adequate personnel who can perform, supervise, and inspect the work for which the station is to be rated. The officials of the station must carefully consider the justifications and abilities of their employees and shall determine the abilities of its uncertificated employees performing maintenance operations on the basis of practical tests or employment records. The repair station is primarily responsible for the satisfactory work of its employees.

(b) The number of repair station employees may vary according to the type and volume of its work. However, the applicant must have enough properly qualified employees to keep up with the volume of work in process, and may not reduce the number of its employees below that necessary to efficiently produce airworthy work.

(c) Each repair station shall determine the abilities of its supervisors and shall provide enough of them for all phases of its activities. However, the Administrator may determine the ability of any supervisor by inspecting his employment and experience records or by a personal test. Each supervisor must have direct supervision over working groups but need not have overall supervision at management level. Whenever apprentices or students are used in working groups on assemblies or other operations that might be critical to the aircraft, the repair station shall provide at least one supervisor for each 10 apprentices or students, unless the apprentices or students are integrated into groups of experienced workers.

(d) Each person who is directly in charge of the maintenance functions of a repair station must be appropriately certificated as a mechanic or repairman under part 65 of this chapter and must have had at least 18 months of practical experience in the procedures, practices, inspection methods, materials, tools, machine tools, and equipment generally used in the work for which the station is rated. Experience as an apprentice or student mechanic may not be counted in computing the 18 months of experience. In addition, at least one of the persons so in charge of maintenance functions for a station with an airframe rating must have had experience in the methods and procedures prescribed by the Administrator for returning aircraft to service after 100-hour, annual, and progressive inspections.

(e) Each limited repair station shall have employees with detailed knowledge of the particular maintenance function or technique for which it is rated, based on attending a factory school or long experience with the product or technique involved.

§ 145.41 Recommendation of persons for certification as repairmen.

(a) When a person applies for a domestic repair station certificate and rating(s) or additional rating(s) that require a repairman, that person must—

(1) Recommend at least one person for certification as a repairman;

(2) Certify to the Administrator that the person recommended meets the requirements of § 65.101 of this chapter; and

(3) Certify that the person recommended is able to perform and supervise the assigned work.

(b) Each person recommended per paragraph (a)(1) of this section must be at or above the level of shop foreman or department head or be responsible for supervising the work performed by the repair station. A qualified person so recommended may be certificated as a repairman.

(Secs. 313, 314, and 601 through 610, of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1354, 1355, 1421 through 1430); sec. 6(c), Dept. of Transportation Act (49 U.S.C. 1655(c)))

[Doc. No. 21269, 47 FR 33390, Aug. 2, 1982]

§ 145.43 Records of supervisory and inspection personnel.

(a) Each applicant for a domestic repair station certificate and rating, or for an additional rating, must have, and each certificated domestic repair station shall maintain, a roster of—

(1) Its supervisory personnel, including the names of the officials of the station that are responsible for its management and the names of its technical supervisors, such as foreman and crew chiefs; and

(2) Its inspection personnel, including the names of the chief inspector and those inspectors who make final airworthiness determinations before releasing an article to service.

(b) The station shall also provide a summary of the employment of each person whose name is on the roster. The summary must contain enough information as to each person on the roster to show compliance with the experience requirements of this subpart, including—

(1) His present title (e.g., chief inspector, metal shop foreman, etc.);

(2) His total years of experience in the type of work he is doing;

(3) His past employment record, with names of places and term of employment by month, and year;

(4) The scope of his present employment (e.g., airframe overhaul, airframe final assembly, engine inspection, department, etc.); and

(5) The type and number of the mechanic or repairman certificate that he holds, and the ratings on that certificate.

(c) The station shall change the roster, as necessary, to reflect—

(1) Terminating the employment of any person whose name is on the roster;

(2) Assigning any person to duties that require his name to be carried on the roster; or

(3) Any appreciable change in the duties and scope of assignment of any person whose name is on the roster.

(d) The station shall keep the roster and employment summaries required by this section, subject to inspection by the Administrator upon his request.

(e) A domestic repair station may not use the services of a person directly in charge of maintenance or alteration unless it keeps current records on him as required by this section.

[Doc. No. 1157, 27 FR 6662, June 13, 1962, as amended by Amdt. 145-5, 31 FR 8585, June 21, 1966; Amdt. 145-15, 41 FR 47230, Oct. 28, 1976]

§ 145.45 Inspection systems.

(a) An applicant for a repair station certificate, and rating or for an additional rating, must have an inspection system that will produce satisfactory quality control and conform to paragraphs (b) to (f) of this section.

(b) The applicant's inspection personnel must be thoroughly familiar with all inspection methods, techniques, and equipment used in their specialty to determine the quality or airworthiness of an article being maintained or altered. In addition, they must—

(1) Maintain proficiency in using various inspection aids intended for that purpose;

(2) Have available and understand current specifications involving inspection tolerances, limitations, and procedures established by the manufacturer

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of the product being inspected and with other forms of inspection information such as FAA airworthiness directives and bulletins; and

(3) In cases where magnetic, fluorescent, or other forms of mechanical inspection devices are to be used, be skilled in operating that equipment and be able to properly interpret defects indicated by it.

(c) The applicant must provide a satisfactory method of inspecting incoming material to insure that, before it is placed in stock for use in an aircraft or part thereof, it is in a good state of preservation and is free from apparent defects or malfunctions.

(d) The applicant must provide a system of preliminary inspection of all articles he maintains to determine the state of preservation or defects. He shall enter the results of each inspection on an appropriate form supplied by it and keep the form with the article until it is released to service.

(e) The applicant must provide a system so that before working on any airframe, powerplant, or part thereof that has been involved in an accident, it will be inspected thoroughly for hidden damage, including the areas next to the obviously damaged parts. He shall enter the results of this inspection on the inspection form required by paragraph (d) of this section.

(f) At the time he applies for a repair station certificate, the applicant must provide a manual containing inspection procedures, and thereafter maintain it in current condition at all times. The manual must explain the internal inspection system of the repair station in a manner easily understood by any employee of the station. It must state in detail the inspection requirements in paragraphs (a) to (e) of this section, and the repair station's inspection system including the continuity of inspection responsibility, samples of inspection forms, and the method of executing them. The manual must refer whenever necessary to the manufacturer's inspection standards for the maintenance of the particular article. The repair station must give a copy of the manual to each of its supervisory and inspection personnel and make it available to its other personnel. The repair station is respon-

sible for seeing that all supervisory and inspection personnel thoroughly understand the manual.

[Doc. No. 1157, 27 FR 6662, June 13, 1962, as amended by Amdt. 145-15, 41 FR 47230, Oct. 28, 1976]

§ 145.47 Equipment and materials: Ratings other than limited ratings.

(a) An applicant for a domestic repair station certificate and rating, or for an additional rating, must have the equipment and materials necessary to efficiently perform the functions appropriate to the ratings he seeks. An applicant for an airframe, propeller, powerplant, radio, instrument, or accessory rating must be equipped to perform the functions listed in appendix A to this part that are appropriate for the rating he seeks.

(b) The equipment and materials required by this part must be of such type that the work for which they are being used can be done competently and efficiently. The station shall ensure that all inspection and test equipment is tested at regular intervals to ensure correct calibration to a standard derived from the National Bureau of Standards or to a standard provided by the equipment manufacturer. In the case of foreign equipment, the standard of the country of manufacture may be used if approved by the Administrator. The equipment and materials required for the various ratings must be located on the premises, and under the full control of the station, unless they are used for a function that the repair station is authorized to obtain by contract. If it obtains them by contract, the repair station shall determine the airworthiness of the article involved, unless the contractor is an appropriately rated repair station.

(c) A certificated domestic or foreign repair station may contract maintenance and alteration of components of a type certificated product to a noncertificated source identified in the repair station's inspection procedures manual provided:

(1) The repair station is the manufacturer who originally manufactured the product for which it holds a U.S. type certificate;

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(2) The contracted component is included as part of the type certificated product;

(3) The component maintenance is done by the original component manufacturer or its manufacturing licensee; and

(4) Before such a component is returned to service, the repair station ensures that it is being returned to service in accordance with the repair station's quality control system as approved by the Administrator and set forth in the repair station's operations specifications and inspection procedures manual.

(d) The applicant shall choose suitable tools and equipment for the functions named in appendix A to this part, as appropriate to each of his ratings, using those the manufacturer of the article involved recommends for maintaining or altering that article, or their equivalent.

(Secs. 313, 314, and 601 through 610, of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1354, 1355, 1421 through 1430); sec. 6(c), Dept. of Transportation Act (49 U.S.C. 1655(c)))

[Doc. No. 1157, 27 FR 6662, July 13, 1962, as amended by Amdt. 145-19, 47 FR 33391, Aug. 2, 1982; Amdt. 145-21, 53 FR 47375, Nov. 22, 1988]

§ 145.49 Equipment and materials: Limited rating.

(a) An applicant for a limited rating (other than specialized services) under § 145.33, must have the equipment and materials to perform any job function appropriate to the rating and class specified in § 145.47 for the rating he seeks. However, he need not be equipped for a function that does not apply to the particular make or model article for which he seeks a rating, if he shows that it is not necessary under the recommendations of the manufacturer of the article.

(b) An applicant for a rating for specialized services or techniques under § 145.33 must—

(1) For magnetic and penetrant inspection, have the equipment and materials for wet and dry magnetic inspection techniques, residual and continuous methods, and portable equipment for the inspection of welds both on and off the aircraft;

(2) For emergency equipment maintenance, have the equipment and materials to perform inspections, repairs, and tests of all kinds of inflated equipment, the re-packing, re-marking, re-sealing, and re-stocking of life rafts, and the weighing, refilling, and testing of carbon dioxide fire extinguishers and oxygen containers;

(3) For rotor blade maintenance, have the equipment, materials, and technical data recommended by the manufacturer; and

(4) For aircraft fabric work, have the equipment and materials to apply protective coatings to structures, machine stitch fabric panels, perform covering, sewing, and rib stitching operations, apply dope and paint using temperature and humidity control equipment, install patches, grommets, tapes, hooks, and similar equipment, and re-finish entire aircraft and aircraft parts.

§ 145.51 Privileges of certificates.

A certificated domestic repair station may—

(a) Maintain or alter any airframe, powerplant, propeller, instrument, radio, or accessory, or part thereof, for which it is rated;

(b) Approve for return to service any article for which it is rated after it has been maintained or altered;

(c) In the case of a station with an airframe rating, perform 100-hour, annual or progressive inspections, and return the aircraft to service; and

(d) Maintain or alter any article for which it is rated at a place other than the repair station, if—

(1) The function would be performed in the same manner as when performed at the repair station and in accordance with §§ 145.57 to 145.61;

(2) All necessary personnel, equipment, material, and technical data is available at the place where the work is to be done; and

(3) The inspection procedures manual of the station sets forth approved procedures governing work to be performed at a place other than the repair station.

However, a certificated repair station may not approve for return to service any aircraft, airframe, aircraft engine, propeller, or appliance after major repair or major alteration unless the

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work was done in accordance with technical data approved by the Administrator.

[Doc. No. 1157, 27 FR 6662, July 13, 1962, as amended by Amdt. 145-2, 29 FR 5451, Apr. 23, 1964]

§ 145.53 Limitations of certificates.

A certificated domestic repair station may not maintain or alter any airframe, powerplant, propeller, instrument, radio, or accessory for which it is not rated, and may not maintain or alter any article for which it is rated if it requires special technical data, equipment, or facilities that are not available to it.

§ 145.55 Maintenance of personnel, facilities, equipment, and materials.

Each certificated domestic repair station shall provide personnel, facilities, equipment, and materials at least equal in quality and quantity to the standards currently required for the issue of the certificate and rating that it holds.

§ 145.57 Performance standards.

(a) Except as provided in §145.2, each certificated domestic repair station shall perform its maintenance and alteration operations in accordance with the standards in part 43 of this chapter. It shall maintain, in current condition, all manufacturers' service manuals, instructions, and service bulletins that relate to the articles that it maintains or alters.

(b) In addition, each certificated domestic repair station with a radio rating shall comply with those sections of part 43 of this chapter that apply to electric systems, and shall use materials that conform to approved specifications for equipment appropriate to its rating. It shall use test apparatus, shop equipment, performance standards, test methods, alterations, and calibrations that conform to the manufacturers' specifications or instructions, approved specification, and, if not otherwise specified, to accept good practices of the aircraft radio industry.

[Doc. No. 1157, 27 FR 6662, July 13, 1962, as amended by Amdt. 145-5, 31 FR 8585, June 21, 1966; Amdt. 145-7, 31 FR 10614, Aug. 9, 1966]

§ 145.59 Inspection of work performed.

(a) Each certificated domestic repair station shall, before approving an airframe, powerplant, propeller, instrument, radio, or accessory for return to service after maintaining or altering it, have that article inspected by a qualified inspector. After performing a maintenance or alteration operation, the station shall certify on the maintenance or alteration record of the article that it is airworthy with respect to the work performed.

(b) For the purposes of paragraph (a) of this section, the qualified inspector must be a person employed by the station, who has shown by experience as a journeyman that he understands the inspection methods, techniques, and equipment used in determining the airworthiness of the article concerned. He must also be proficient in using various types of mechanical and visual inspection aids appropriate for the article being inspected.

[Doc. No. 1157, 27 FR 6662, July 13, 1962, as amended by Amdt. 145-16, 43 FR 22643, May 25, 1978]

§ 145.61 Performance records and reports.

Each certificated domestic repair station shall maintain adequate records of all work that it does, naming the certificated mechanic or repairman who performed or supervised the work, and the inspector of that work. The station shall keep each record for at least two years after the work it applies to is done.

§ 145.63 Reports of defects or unairworthy conditions.

(a) Each certificated domestic repair station shall report to the Administrator within 72 hours after it discovers any serious defect in, or other recurring unairworthy condition of, an aircraft, powerplant, or propeller, or any component of any of them. The report shall be made on a form and in a manner prescribed by the Administrator, describing the defect or malfunction completely without withholding any pertinent information.

(b) In any case where the filing of a report under paragraph (a) of this section might prejudice the repair station,

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it shall refer the matter to the Administrator for a determination as to whether it must be reported. If the defect or malfunction could result in an imminent hazard to flight, the repair station shall use the most expeditious method it can to inform the Administrator.

(c) The holder of a domestic repair station certificate that is also the holder of a part 121, 127, or 135 certificate, a Type Certificate (including a Supplemental Type Certificate), a Parts Manufacturer Approval (PMA), or a TSO authorization, or that is the licensee of a Type Certificate, need not report a failure, malfunction, or defect under this section if the failure, malfunction, or defect has been reported by it, under § 21.3, § 37.17, § 121.703, § 127.313, or § 135.57 of this chapter.

[Doc. No. 1157, 27 FR 6662, July 13, 1962, as amended by Amdt. 145-9, 35 FR 3155, Feb. 19, 1970; Amdt. 145-13, 35 FR 18189, Nov. 28, 1970]

EFFECTIVE DATE NOTE: By Amdt. 145-22, 65 FR 56206, Sept. 15, 2000, § 145.63 was amended by revising paragraphs (a) and (c) and adding paragraphs (d) and (e), effective Jan. 16, 2001. At 65 FR 80743, Dec. 22, 2000, the effective date was delayed until July 16, 2001. For the convenience of the user, the added and revised text is set forth as follows:

§ 145.63 Reports of defects or unairworthy conditions.

(a) Each certificated domestic repair station shall, within 96 hours after it discovers any serious defect in, or other recurring unairworthy condition of, an aircraft, powerplant, or propeller, or any component of any of them, submit a report to a central collection point as specified by the Administrator. The report shall be made on a form or in another format acceptable to the Administrator, describing the defect or unairworthy condition completely without withholding any pertinent information.

* * * * *

(c) The holder of a domestic repair station certificate that also is the holder of a part 121, part 125, or part 135 certificate, a Type Certificate (including a Supplemental Type Certificate), a Parts Manufacturer Approval, or a Technical Standard Order Authorization, or that is the licensee of a Type Certificate holder, need not report a failure, malfunction, or defect under this section if the failure, malfunction, or defect has been reported by it under § 21.3, § 121.703, § 121.704, § 125.409, § 125.410, § 135.415, or § 135.416 of this chapter.

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(d) A certificated domestic repair station may submit a Service Difficulty Report (operational or structural) for—

(1) A part 121 certificate holder under § 121.703(g) or § 121.704(f) provided that the report meets the requirements of §§ 121.703(d) and 121.703(e), or §§ 121.704(c) and 121.704(d) of this chapter, as appropriate;

(2) A part 125 certificate holder under § 125.409(g) or § 125.410(f) provided that the report meets the requirements of §§ 125.409(d) and 125.409(e), or §§ 125.410(c) and 125.410(d) of this chapter, as appropriate;

(3) A part 135 certificate holder under § 135.415(g) or § 135.416(f) provided that the report meets the requirements of §§ 135.415(d) and 135.415(e), or §§ 135.416(c) and 135.416(d) of this chapter, as appropriate.

(e) A certificated domestic repair station authorized to report a failure, malfunction, or defect under paragraph (d) of this section shall not report the same failure, malfunction, or defect under paragraph (a) of this section. A copy of the report submitted under paragraph (d) of this section shall be forwarded to the certificate holder.

Subpart C—Foreign Repair Stations

§ 145.71 General requirements.

A repair station certificate with appropriate ratings may be issued for a foreign repair station if the Administrator determines that it will be necessary for maintaining or altering United States registered aircraft and aircraft engines, propellers, appliances, and component parts thereof for use on United States registered aircraft. A foreign repair station must meet the requirements for a domestic repair station certificate, except those in §§ 145.39 through 145.43.

[Doc. No. 25454, 53 FR 47376, Nov. 22, 1988]

§ 145.73 Scope of work authorized.

(a) A certificated foreign repair station may, with respect to United States registered aircraft, maintain or alter aircraft, airframes, powerplants, propellers, or component parts thereof. The Administrator may prescribe operations specifications containing limitations that the Administrator determines necessary to comply with the airworthiness requirements of this chapter.

(b) A certificated foreign repair station may perform only the specific

services and functions within the ratings and classes that are stated in its operations specifications.

[Doc. No. 25454, 53 FR 47376, Nov. 22, 1988]

§ 145.75 Personnel.

(a) Each applicant for a foreign repair station certificate and rating, or for an additional rating, must provide enough personnel who are able to perform, supervise, and inspect the work for which he seeks a rating, with regard being given to its volume of work.

(b) The supervisors and inspectors of each certificated foreign repair station must understand the regulations in this chapter, FAA airworthiness directives, and the maintenance and service instructions of the manufacturers of the articles to be worked on. However, they do not need airman certificates issued under this chapter and, along with the persons performing the work of the station, are not considered to be airmen within the meaning of section 101(7) of the Federal Aviation Act of 1958 (49 U.S.C. 1301) with respect to work performed in connection with their employment by the foreign repair station.

(c) In cases where the persons engaged in supervision or final inspection are not certificated under this chapter or by the country in which the station is located, their qualifications are determined by the Administrator, based on their ability to meet the requirements of paragraph (a) of this section as shown by oral or practical test or any other method the Administrator elects.

(d) No person may be responsible for the supervision or final inspection of work on an aircraft of United States registry at a foreign repair station unless he can read, write, and understand English.

§ 145.77 General operating rules.

Each certificated foreign repair station shall comply with the operating rules prescribed in subpart B of this part, except for §§ 145.61 and 145.63, and has the privileges of a domestic repair station as provided in § 145.51.

§ 145.79 Records and reports.

(a) Each certificated foreign repair station shall maintain such records, and make such reports, with respect to United States registered aircraft, as the Administrator finds necessary, including those prescribed in paragraphs (b) and (c) of this section.

(b) Each certificated foreign repair station shall keep a record of the maintenance and alteration it performs on United States registered aircraft, in enough detail to show the make, model, identification number, and serial number of the aircraft involved, and a description of the work. In a case of major repairs or major alterations, or both, it shall report on a form and in a manner prescribed by the Administrator, giving the original copy to the aircraft owner and sending a copy to the Administrator through the FAA office having jurisdiction over the station. However, if a major repair or alteration is made on a United States scheduled flag air carrier aircraft, the report may be made in the log or other record provided by the carrier for that purpose. Upon request, the station shall make all of its maintenance and alteration records available to the Administrator.

(c) Each certificated foreign repair station shall, within 72 hours after it discovers any serious defect in, or other recurring unairworthy condition of, any aircraft, powerplant, propeller, or any component of any of them, that it works on under this part, report that defect or unairworthy condition to the Administrator.

(d) The holder of a foreign repair station certificate that is also the holder of a Type Certificate (including a Supplemental Type Certificate), a Parts Manufacturer Approval (PMA), or a TSO authorization or that is the licensee of a Type Certificate need not report a failure, malfunction, or defect under this section if the failure, malfunction, or defect has been reported by it, under § 21.3 of this chapter or § 37.17 of this chapter.

[Doc. No. 1157, 27 FR 6662, July 13, 1962, as amended by Amdt. 145-9, 35 FR 3155, Feb. 19, 1970; Amdt. 145-13, 35 FR 18189, Nov. 28, 1970]

EFFECTIVE DATE NOTE: By Amdt. 145-22, 65 FR 56206, Sept. 15, 2000, § 145.79 was amended

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by revising paragraphs (c) and (d) and adding paragraphs (e) and (f), effective Jan. 16, 2001. At 65 FR 80743, Dec. 22, 2000, the effective date was delayed until July 16, 2001. For the convenience of the user, the added and revised text is set forth as follows:

§ 145.79 Records and reports.

* * * * *

(c) Each certificated foreign repair station shall, within 96 hours after it discovers any serious defect in, or other recurring unairworthy condition of, any aircraft, powerplant, propeller, or any component of any of them, submit a report to a central collection point as specified by the Administrator. The report shall be made on a form or another format acceptable to the Administrator, describing the defect or unairworthy condition completely without withholding any pertinent information.

(d) The holder of a foreign repair station certificate that also is the holder of a Type Certificate (including a Supplemental Type Certificate), a Parts Manufacturer Approval, or a Technical Standard Order Authorization or that is the licensee of a Type Certificate holder need not report a failure, malfunction, or defect under this section if the failure, malfunction, or defect has been reported by it under § 21.3 of this chapter.

(e) A certificated foreign repair station may submit a Service Difficulty Report (operational or structural) for—

(1) A part 121 certificate holder under § 121.703(g) or § 121.704(f) provided that the report meets the requirements of §§ 121.703(d) and 121.703(e) or §§ 121.704(c) and 121.704(d) of this chapter, as appropriate;

(2) A part 125 certificate holder under § 125.409(g) or § 125.410(f) provided that the report meets the requirements of §§ 125.409(d) and 125.409(e) or §§ 125.410(c) and 125.410(d) of this chapter, as appropriate;

(3) A part 135 certificate holder under § 135.415(g) or § 135.416(f) provided that the report meets the requirements of §§ 135.415(d) and 135.415(e) or §§ 135.416(c) and 135.416(d) of this chapter, as appropriate.

(f) A certificated foreign repair station authorized to report a failure, malfunction, or defect under paragraph (e) of this section shall not report the same failure, malfunction, or defect under paragraph (c) of this section. A copy of the report submitted under paragraph (e) of this section shall be forwarded to the certificate holder.

Subpart D—Limited Ratings for Manufacturers

AUTHORITY: Secs. 313(a), 601, 602, 605, and 607, 72 Stat. 752; 49 U.S.C. 1354(a), 1421, 1422, 1425, and 1427.

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SOURCE: Docket No. 1221, 31 FR 5249, Apr. 1, 1966, unless otherwise noted.

§ 145.101 Application and issue.

(a) Upon application in a form and manner prescribed by the Administrator, a repair station certificate with a limited rating for a manufacturer may be issued without further showing to—

(1) The holder or licensee of a Type Certificate who has an approved production inspection system;

(2) The holder of a Production Certificate;

(3) Any person who meets the requirements of § 21.303 of this chapter, and has the prescribed Fabrication Inspection System; and

(4) The holder of a Technical Standard Order (TSO) authorization.

(b) Limited ratings are issued under paragraph (a) of this section for—

(1) Aircraft manufactured by the holder of the rating under a Type Certificate or a Production Certificate;

(2) Aircraft engines manufactured by the holder of the rating under a Type Certificate or a Production Certificate;

(3) Propellers manufactured by the holder of the rating under a Type Certificate or a Production Certificate;

(4) Appliances manufactured by the holder of the rating (i) under a Type Certificate, (ii) under a Production Certificate, (iii) under a TSO authorization, or (iv) in accordance with § 21.303 of this chapter; and

(5) Parts manufactured by the holder of the rating under a TSO authorization or in accordance with § 21.303 of this chapter.

§ 145.103 Privileges of certificates.

(a) The holder of a repair station certificate issued under this subpart may maintain and approve for return to service any article for which it is rated, and perform preventive maintenance on that article, if certificated mechanics or repairmen are employed directly in charge of the maintenance and preventive maintenance.

(b) The privileges granted under this section apply to any location or facility unless the certificate limits the holder to specific locations or facilities.

§ 145.105 Performance standards.

Except as provided in §145.2, each holder of a certificate issued under this subpart shall perform its maintenance and preventive maintenance operations in accordance with part 43 of this chapter.

[Amdt. 145-7, 31 FR 10614, Aug. 9, 1966]

APPENDIX A TO PART 145

NOTE: When an asterisk (*) is shown after any job function listed in this appendix it indicates that the applicant need not have the equipment and material on his premises for performing this job function provided he contracts that particular type work to an outside agency having such equipment and material.

(a) An applicant for a Class 1, 2, 3, or 4 airframe rating must provide equipment and material necessary for efficiently performing the following job functions:

(1) Steel structural components:

Repair or replace steel tubes and fittings using the proper welding techniques when appropriate.

Anticorrosion treatment of the interior and exterior of steel parts,

Metal plating or anodizing*,

Simple machine operations such as making bushings, bolts, etc.,

Complex machine operations involving the use of planers, shapers, milling machines, etc.*,

Fabricate steel fittings,

Abrasive air blasting and chemical cleaning operations*,

Heat treatment*,

Magnetic inspection*,

Repair or rebuilt metal tanks*.

(2) Wood structure:

Splice wood spars,

Repair ribs and spars (wood),

Fabricate wood spars*,

Repair or replace metal ribs,

Interior alignment of wings,

Repair or replace plywood skin,

Treatment against wood decay.

(3) Alloy skin and structural components:

Repair and replace metal skin, using power tools and equipment,

Repair and replace alloy members and components such as tubes, channels, cowlings, fittings, attach angles, etc.,

Alignment of components using jigs or fixtures as in the case of joining fuselage sections or other similar operations,

Make up wooden forming blocks or dies,

Fluorescent inspection of alloy components*,

Fabricate alloy members and components such as tubes, channels, cowlings, fittings, attach angles, etc.*

(4) Fabric covering:

Repairs to fabric surfaces,

Recovering and refinishing of components and entire aircraft*.

(5) Control systems:

Renewing control cables, using swaging and splicing techniques,

Rigging complete control system,

Renewing or repairing all control system hinge point components such as pins, bushings, etc.,

Install control system units and components.

(6) Landing gear systems:

Renew or repair all landing gear hinge point components and attachments such as bolts, bushings, fittings, etc.,

Overhaul and repair elastic shock absorber units,

Overhaul and repair hydraulic-pneumatic shock absorber units*,

Overhaul and repair brake system components*,

Conduct retraction cycle tests,

Overhaul and repair electrical circuits,

Overhaul and repair hydraulic system components*,

Repair or fabricate hydraulic lines.

(7) Electric wiring systems:

Diagnose malfunctions,

Repair or replace wiring,

Installation of electrical equipment,

Bench check electrical components (this check is not to be confused with the more complex functional test after overhaul).

(8) Assembly operations:

Assembly of airframe component parts such as landing gear, wings, controls, etc.,

Rigging and alignment of airframe components, including the complete aircraft and control system,

Installation of powerplants,

Installation of instruments and accessories,

Assembly and fitting of cowlings, fairings, etc.,

Repair and assembly of plastic components such as windshields, windows, etc.,

Jack or hoist complete aircraft.

Conduct aircraft weight and balance operations (this function will be conducted in draft-free area)*,

Balance control surfaces.

(b) An applicant for any class of powerplant rating must provide equipment and material necessary for efficiently performing the following job functions appropriate to the class of rating applied for:

(1) Classes 1 and 2. (i) Maintain and alter powerplants, including replacement of parts:

Chemical and mechanical cleaning,

Disassembly operations,

Replacement of valve guides and seats*,

Replacement of bushings, bearings, pins, inserts, etc.,

Plating operations (copper, silver, cadmium, etc.)*.

Heating operations (involving the use of recommended techniques requiring controlled heating facilities),

Chilling or shrinking operations,

Removal and replacement of studs,

Inscribing or affixing identification information,

Painting of powerplants and components,

Anticorrosion treatment for parts,

Replacement and repair of powerplant alloy sheet metal and steel components such as baffles, fittings, etc.*

(ii) Inspect all parts, using appropriate inspection aids:

Magnetic, fluorescent and other acceptable inspection aids*,

Precise determination of clearances and tolerances of all parts,

Inspection for alignment of connecting rods, crankshafts, impeller shafts, etc.,

Balancing of parts, including crankshafts, impellers, etc.*,

Inspection of valve springs.

(iii) Accomplish routine machine work:

Precision grinding, honing and lapping operations (includes crankshaft, cylinder barrels, etc.)*,

Precision drilling, tapping, boring, milling and cutting operations*,

Reaming of inserts, bushings, bearings and other similar components,

Refacing of valves.

(iv) Perform assembly operations:

Valve and ignition timing operations,

Fabricate and test ignition harnesses,

Fabricate and test rigid and flexible fluid lines,

Prepare engines for long- or short-term storage,

Functional check powerplant accessories (this check is not to be confused with the more complex performance test of overhaul)*,

Hoist engines by mechanical means,

Install engines in aircraft*,

Align and adjust engine controls*,

Installation of engines in aircraft and alignment and adjustment of engine controls, when completed, must be inspected by either an appropriately rated certificated mechanic or certificated repairman. Persons supervising or inspecting these functions must thoroughly understand the pertinent installation details involved.

(v) Test overhauled powerplants in compliance with manufacturers' recommendations: The test equipment will be the same as recommended by the manufacturers of the particular engines undergoing test or equivalent equipment that will accomplish the same purpose. The testing function may be performed by the repair station itself, or may be contracted to an outside agency. In either case the repair station will be responsible for the final acceptance of the tested engine.

(2) Class 3. Functional and equipment requirements for turbine engines will be gov-

erned entirely by the recommendations of the manufacturer, including techniques, inspection methods, and test.

(c) An applicant for any class of propeller rating must provide equipment and material necessary for efficiently performing the following job functions appropriate to the class of rating applied for:

(1) Class 1. (i) Maintain and alter propellers, including installation and replacement of parts:

Replace blade tipping,

Refinish wood propellers,

Make wood inlays,

Refinish plastic blades,

Straighten bent blades within repairable tolerances,

Modify blade diameter and profile,

Polish and buff,

Painting operations,

Remove from and reinstall on powerplants.

(ii) Inspect components, using appropriate inspection aids:

Inspect propellers for conformity with manufacturer's drawings and specifications,

Inspect hubs and blades for failures and defects, using magnetic or fluorescent inspection devices*,

Inspect hubs and blades for failures and defects, using all visual aids, including the etching of parts,

Inspect hubs for wear of splines or keyways or any other defect.

(iii) Repair or replace components: (Not applicable to this class).

(iv) Balance propellers:

Test for proper track on aircraft,

Test for horizontal and vertical unbalance (this test will be accomplished with the use of precision equipment).

(v) Test propeller pitch-changing mechanisms: (Not applicable to this class).

(2) Class 2. (i) Maintain and alter propellers, including installation and the replacement of parts:

All functions listed under paragraph (c)(1)(i) of this appendix when applicable to the make and model propeller for which a rating is sought,

Properly lubricate moving parts,

Assemble complete propeller and sub-assemblies, using special tools when required.

(ii) Inspect components, using appropriate inspection aids: All functions listed under paragraph (c)(1)(ii) of this appendix when applicable to the make and model propeller for which a rating is sought.

(iii) Repair or replace component parts:

Replace blades, hubs, or any of their components,

Repair or replace anti-icing devices,

Remove nicks or scratches from metal blades,

Repair or replace electrical propeller components.

(iv) Balance propellers: All functions listed under paragraph (c)(1)(iv) of this appendix when applicable to the make and model propeller for which a rating is sought.

(v) Test propeller pitch-changing mechanism:

Test hydraulically, propellers and components,

Test electrically operated propellers and components,

Test of constant speed devices*.

(d) An applicant for a radio rating must provide equipment and materials as follows:

(1) For a Class 1 (Communications) radio rating, the equipment and materials necessary for efficiently performing the job functions listed in paragraph (4) and the following job functions:

The testing and repair of headsets, speakers, and microphones.

The measuring of radio transmitter power output.

(2) For a Class 2 (Navigation) radio rating, the equipment and materials necessary for efficiently performing the job functions listed in paragraph (4) and the following job functions:

The testing and repair of headsets.

The testing of speakers.

The repair of speakers.*

The measuring of loop antenna sensitivity by appropriate methods.

The determination and compensation for quadrantal error in aircraft direction finder radio equipment.

The calibration of any radio navigational equipment, enroute and approach aids, or similar equipment, appropriate to this rating to approved performance standards.

(3) For Class 3 (Radar) radio rating, the equipment and materials necessary for efficiently performing the job functions listed in paragraph (4) and the following job functions:

The measuring of radio transmitter power output.

The metal plating of transmission lines, wave guides, and similar equipment in accordance with appropriate specifications.*

The pressurization of appropriate radar equipment with dry air, nitrogen, or other specified gases.

(4) For all classes of radio ratings, the equipment and materials necessary for efficiently performing the following job functions:

Perform physical inspection of radio systems and components by visual and mechanical methods.

Perform electrical inspection of radio systems and components by means of appropriate electrical and/or electronic test instruments.

Check aircraft wiring, antennas, connectors, relays, and other associated radio components to detect installation faults.

Check engine ignition systems and aircraft accessories to determine sources of electrical interference.

Check aircraft power supplies for adequacy and proper functioning.

Test radio instruments.*

Overhaul, test, and check dynamotors, inverters, and other radio electrical apparatus.*

Paint and refinish equipment containers.*

Accomplish appropriate methods of marking calibrations, or other information on radio control panels and other components, as required.*

Make and reproduce drawings, wiring diagrams, and other similar material required to record alterations and/or modifications to radio (photographs may be used in lieu of drawings when they will serve as an equivalent or better means of recording).*

Fabricate tuning shaft assemblies, brackets, cable assemblies, and other similar components used in radios or aircraft radio installations.*

Align tuned circuits (RF and IF).

Install and repair aircraft antennas.

Install complete radio systems in aircraft and prepare weight and balance reports* (That phase of radio installation requiring alterations to the aircraft structure must be performed, supervised, and inspected by qualified personnel).

Measure modulation values, noise, and distortion in radios.

Measure audio and radio frequencies to appropriate tolerances and perform calibration necessary for the proper operation of radios.

Measure radio component values (inductance, capacitance, resistance, etc.).

Measure radiofrequency transmission line attenuation.

Determine wave forms and phase in radios when applicable.

Determine proper aircraft radio antenna, lead-in and transmission line characteristics and locations for type of radio equipment to which connected.

Determine operational condition of radio equipment installed in aircraft by using appropriate portable test apparatus.

Determine proper location for radio antennas on aircraft.

Test all types of electronic tubes, transistors, or similar devices in equipment appropriate to the rating.

(e) An applicant for any class of instrument rating must provide equipment and material necessary for efficiently performing the following job functions, in accordance with pertinent specifications and manufacturers' recommendations, appropriate to the class of rating applied for:

(1) Class 1. (i) Diagnose instrument malfunctions: Diagnose malfunctioning of the following instruments:

Rate of climb indicators,

Altimeters,

Air speed indicators,
Vacuum indicators,
Oil pressure gauges,
Fuel pressure gauges,
Hydraulic pressure gauges,
Deicing pressure gauges,
Pitot-static tube,
Direct indicating compasses,
Accelerometer,
Direct indicating tachometers,
Direct reading fuel quantity gauges,
Optical (sextants, drift sights, etc.)*.

(ii) Maintain and alter instruments, including installation and replacement of parts:

Perform these functions on instruments listed under paragraph (e)(1)(i) of this appendix.

The function of installation includes fabrication of instrument panels and other installation structural components. The repair station should be equipped to perform this function. However, it may be contracted to a competent outside agency equipped to perform the function.

(iii) Inspect, test and calibrate instruments: Perform these functions on instruments listed under paragraph (e)(1)(i) of this appendix, on and off the aircraft, when appropriate.

(2) Class 2. (i) Diagnose instrument malfunctions: Diagnose malfunctioning of the following instruments:

Tachometers,
Synchroscope,
Electric temperature indicators,
Electric resistance type indicators,
Moving magnet type indicators,
Resistance type fuel indicators,
Warning units (oil-fuel),
Selsyn systems and indicators,
Self-synchronous systems and indicators,
Remote indicating compasses,
Fuel quantity indicators,
Oil quantity indicators,
Radio indicators,
Ammeters,
Voltsmeters.

(ii) Maintain and alter instruments, including installation and the replacement of parts:

Perform these functions on instruments listed under paragraph (e)(2)(i) of this appendix.

The function of installation includes fabrication of instrument panels and other installation structural components. The repair station should be equipped to perform this function. However, it may be contracted to a competent outside agency equipped to perform the function.

(iii) Inspect, test and calibrate instruments: Perform these functions on instruments listed under paragraph (e)(2)(i) of this appendix, on and off the aircraft, when appropriate.

(3) Class 3. (i) Diagnose instrument malfunctions: Diagnose malfunctioning of the following instruments:

Turn and bank indicators,
Directional gyros,
Horizon gyros,
Auto pilot control units and components*,
Remote reading direction indicators*.

(ii) Maintain and alter instruments, including installation and replacement of parts:

Perform these functions on instruments listed under paragraph (e)(3)(i) of this appendix.

The function of installation includes fabrication of instrument panels and other installation structural components. The repair station should be equipped to perform this function. However, it may be contracted to a competent outside agency equipped to perform the function.

(iii) Inspect, test and calibrate instruments: Perform these functions on instruments listed under paragraph (e)(3)(i) of this appendix, on and off the aircraft, when appropriate.

(4) Class 4. (i) Diagnose instrument malfunctions: Diagnose malfunctioning of the following instruments:

Capacitance type quantity gauge,
Other electronic instruments,
Engine analyzers.

(ii) Maintain and alter instruments, including installation and replacement of parts:

Perform these functions on instruments listed under paragraph (e)(4)(i) of this appendix.

The function of installation includes fabrication of instrument panels and other installation structural components. The repair station should be equipped to perform this function. However, it may be contracted to a competent outside agency equipped to perform the function.

(iii) Inspect, test and calibrate instruments: Perform these functions on instruments listed under paragraph (e)(4)(i) of this appendix, on and off the aircraft, when appropriate.

(f) An applicant for a Class 1, 2, or 3 accessory rating must provide equipment and material necessary for efficiently performing the following job functions, in accordance with pertinent specifications and the manufacturers' recommendations:

(1) Diagnose accessory malfunctions.

(2) Maintain and alter accessories, including installation and the replacement of the parts.

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(3) Inspect, test, and, where necessary, calibrate accessories.

(Secs. 313, 314, and 601 through 610, of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1354, 1355, 1421 through 1430); sec. 6(c), Dept. of Transportation Act (49 U.S.C. 1655(c)))

[Doc. No. 1157, 27 FR 11693, Nov. 28, 1962, as amended by Amdt. 145-14, 35 FR 19349, Dec. 22, 1970; Amdt. 145-19, 47 FR 33391, Aug. 2, 1982]

PART 147—AVIATION MAINTENANCE TECHNICIAN SCHOOLS

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147.38 Maintenance of curriculum requirements.

147.38a Quality of instruction.

147.39 Display of certificate.

147.41 Change of location.

147.43 Inspection.

147.45 Advertising.

APPENDIX A TO PART 147—CURRICULUM REQUIREMENTS

APPENDIX B TO PART 147—GENERAL CURRICULUM SUBJECTS

APPENDIX C TO PART 147—AIRFRAME CURRICULUM SUBJECTS

APPENDIX D TO PART 147—POWERPLANT CURRICULUM SUBJECTS

AUTHORITY: 49 U.S.C. 106(g), 40113, 44701-44702, 44707-44709.

SOURCE: Docket No. 1157, 27 FR 6669 July 13, 1962, unless otherwise noted.

Subpart A—General

§ 147.1 Applicability.

This part prescribes the requirements for issuing aviation maintenance technician school certificates and associated ratings and the general operating rules for the holders of those certificates and ratings.

§ 147.3 Certificate required.

No person may operate as a certificated aviation maintenance technician school without, or in violation of, an aviation maintenance technician school certificate issued under this part.

[Doc. No. 15196, 41 FR 47230, Oct. 28, 1976]

§ 147.5 Application and issue.

(a) An application for a certificate and rating, or for an additional rating, under this part is made on a form and in a manner prescribed by the Administrator, and submitted with—

(1) A description of the proposed curriculum;

(2) A list of the facilities and materials to be used;

(3) A list of its instructors, including the kind of certificate and ratings held and the certificate numbers; and

(4) A statement of the maximum number of students it expects to teach at any one time.

(b) An applicant who meets the requirements of this part is entitled to an aviation maintenance technician school certificate and associated ratings prescribing such operations specifications and limitations as are necessary in the interests of safety.

[Docket No. 1157, 27 FR 6669, July 13, 1962, as amended by Amdt. 147-5, 57 FR 28959, June 29, 1992]

§ 147.7 Duration of certificates.

(a) An aviation maintenance technician school certificate or rating is effective until it is surrendered, suspended, or revoked.